IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Please amend the claims as follows:

1. (*Currently Amended*) A microtome comprising:

a holding device with a support for holding at least one portion of a processed object,

at least one source of laser radiation,

means for focusing the laser radiation at a numerical aperture ≥ 0.65 to produce a focused beam, the beam focus being movable relative to the support, and with a capacity to be guided to one location of the parting surface of the processed object in order to cause microtomy of said processed object by severing a slice of at least a partial area from a parting surface of the material at this location, and

means for pulsed delivery of the focused beam to the location of the parting surface said pulses having a length of action of $<1\times10^{-12}$ seconds.

2. (Previously Amended) Microtome as claimed in claim 1, wherein the means for focusing the laser radiation is set up to move the beam focus in at least one direction of space relative to the support.

3. (Previously Amended) Microtome as claimed in claim 1, further comprising means for guiding the laser radiation to move the beam focus in at least one direction of space relative to the support.

4. (*Currently Amended*) Microtome as claimed in claim 1, wherein the means for focusing the laser radiation has a numerical aperture ≥ 1.2 ~~0.65~~.

5. (Previously Presented) Microtome as claimed in claim 1, wherein the means for pulsed delivery is set up to interrupt the beam in a pulsating manner and/or to route it away from the location of the parting surface.

6. (Previously Presented) Microtome as claimed in claim 1, wherein the means for pulsed delivery interacts with the radiation source in order to interrupt the beam in a pulsating manner.

7. (Previously Amended) Microtome as claimed in claim 1, further comprising control means for controlling the time sequence of the radiation pauses and/or which are connected to means for detecting the time sequence of the radiation pauses, and/or controlling the relative motion between the beam focus and the support depending on the time sequence of the radiation pauses.

8. (Previously Presented) Microtome as claimed in claim 1, further comprising control means for controlling the time sequence of the radiation pauses depending on the relative motion, said control means being connected to means for detecting the relative motion between the beam focus and the carrier.

9. (Previously Amended) Microtome as claimed in claim 1, further comprising means for controlling relative motion between the support and the beam focus along a curved parting surface.

10. (Previously Amended) Microtome as claimed in claim 1, further comprising means for observing the processed object.

11. (Previously Presented) Microtome as claimed in claim 10, wherein the observation means comprises an optical microscope which can be operated using the incident light and/or transmitted light process.

12. (Previously Amended) Microtome as claimed in claim 10, wherein the observation means contains means for displaying at least one portion of the processed object using backscattered laser radiation.

13. (Previously Amended) Microtome as claimed in claim 12, wherein the display means comprises:

a detector for detection of the radiation which has been backscattered from a portion of the processed object,

means for detecting coherent radiation which has been reflected from a reference plane, and

means for producing an image display of a portion of the processed object by means of superimposition of the laser radiation which has been backscattered from the portion of the processed object and the coherent radiation which has been reflected from the reference plane.

14. (*Currently Amended*) Process for microtomy of processed objects, comprising the following steps:

holding at least one portion of the processed object by a support of a holding device,

at least partially severing a slice of at least a partial area of a parting surface of the processed object by a cutting device, wherein laser radiation is released from a radiation source which is assigned to the cutting device, and this laser radiation is focused at a numerical aperture ≥ 0.65 and the beam focus is routed in a sequence of pulses to a location of the parting surface of the processed object in order to produce material severing of said slice at this site, the beam focus relative to the support being moved in two or three directions of space so that the processed object is microtomed.

15. (Previously Presented) Process as claimed in claim 14, wherein the length of action of a pulse is $<1\times10^{-12}$ seconds.

16. (Previously Amended) Process as claimed in claim 14, wherein the beam focus is guided along a curved surface.

17. (Previously Presented) Process as claimed in claim 14, wherein the sequence of pulses and the relative motion between the support and the beam focus in time to one another are controlled.

18. (Previously Presented) Process as claimed in claim 14, wherein the parting surface is predetermined prior to the cutting process and the beam focus is guided automatically along this parting surface.

19. (Previously Presented) Process as claimed in claim 18, wherein prior to the cutting process an image of at least one portion of the processed object is prepared by means of an optical microscopy imaging process and the parting surface is predetermined using this image.

20. (Previously Presented) Process as claimed in claim 18, wherein prior to the cutting process an image of at least one portion of the processed object is prepared by means of the process of optical coherence tomography and the parting surface is predetermined using this image.

21. (Previously Presented) Process as claimed in claim 14, wherein during the cutting process an image of at least one portion of the processed object is prepared by an optical microscopy imaging process and/or the process of optical coherence tomography is prepared and a reproduction of this image is made available to the user, using which he can guide the beam focus.

22. (Previously Presented) Process as claimed in claim 14, wherein in a first phase of the cutting process one or more regions of the parting surface which are spaced apart from one another are severed and in the last phase of the cutting process complete severing along the parting surface takes place by severing the areas which lie between the spaced regions.

23. (Canceled)

24. (New) Process as claimed in claim 14 wherein the severing occurs when said laser radiation is focused at a numerical aperture of ≥ 1.2.